

Remarks

Status of the Subject Application

Claims 1, 2, 4-6, 8-11, 13-24, 26, 27, 30-47, 49-55, and 57-61 are pending in the Subject Application and stand rejected under 35 U.S.C. §103 as being unpatentable over United States Patent Application Publication No. 2002/0062472 to Bolle et al. (hereinafter “Bolle”) in view of United States Patent Application Publication No. 2005/0146605 to Lipton et al. (hereinafter “Lipton”).

Claim Amendments

Claim 1 is amended herein in accordance with the suggestion of the Examiner.

Claim 46 is amended herein for consistent use of the term “event.”

Claim Rejections Under 35 U.S.C. § 103

Initially, Applicants submit that it would not be reasonable for one skilled in the art of event detection and object tracking who is seeking to detect events and track objects by analyzing a non-image feature stream to combine Bolle and Lipton to solve that problem.

In Bolle, “the problem with prior art compressions is that it is not possible to transmit high-resolution, high frame rate over low bandwidth channels.” (Para. 32.) Bolle, therefore, purports to permit an expert to select a form of video compression to transmit a portion of a scene that is relevant to a particular task over a low bandwidth channel so the expert can guide a field agent in performing operations. See para. 46-47 and 68. Lipton discloses a fairly generic video surveillance system. Applicants submit that Bolle and Lipton are not in the same field of endeavor and that it would not have been obvious for someone to combine portions of the Bolle remote expert selectable video compression form with the Lipton generic surveillance system to arrive at a system that detects

events and tracks objects by analyzing a non-image feature stream, unless that person had previous knowledge of the Subject Invention.

Applicants further submit that Bolle and Lipton do not disclose all of the elements of the claims.

In the description of FIG. 5, Bolle discloses a compressed and decompressed frame 550 from a video camera received at an office site. Edge elements are transmitted to the office to orient the camera. After the right direction has been established a high-resolution snapshot, such as a full photo-realistic image, can be uploaded. See paragraphs 76 and 77.

In the description of FIG. 3, Bolle discloses transmission of compressed video or images and decoding the compressed video into displayable form to be sent to a display output device. Bolle states “the output need not be a photo-realistic rendering of the scene acquired in the field.” Thus, as may be seen in FIG. 3, Bolle acquires image data at 340, compresses that image data at 350, decompresses the image data at 355, and displays the decompressed image data at 170 in what may not be a photo-realistic rendering of the acquired scene. See paragraph 73 and Fig. 3.

Claim 1 of the Subject Application, conversely, recites generating non-image feature data from an image stream, transmitting a stream of non-image features, and detecting an event from analyzing the stream of non-image features. An operator is informed when that analysis indicates an event occurring in the image stream from which the non-image feature data was generated and, as stated in claim 2, the operator may receive at least a portion of the image stream in response to detection of an event in the non-image stream.

Accordingly, Applicants submit that Bolle does not disclose at least generating non-image feature data from an image stream (Bolle, rather, compresses image data for later decompression and display); transmitting a

stream of non-image data (Bolle, rather, transmits compressed image data); detecting an event from analyzing the non-image feature stream, as noted by the Examiner (Bolle, rather, transmits edge data for display during camera orientation and, thereafter, transmits a high-resolution snapshot, such as a full photo-realistic image); or transmitting indications regarding an event in an image stream to an operator (Bolle, rather, transmits a high-resolution snapshot, such as a full photo-realistic image).

Claim 32 of the Subject Application recites extracting non-image features from each of a plurality of image acquisition devices, prior to detecting said event, generating a reduced bandwidth non-image feature stream for each said image stream in the vicinity of the image acquisition devices, prior to detecting said event, transmitting said reduced bandwidth non-image feature stream for each of said plurality of image acquisition devices to a remote image processing server and detecting events by performing high level image processing at said remote image processing server, said high level image processing comprising: i) receiving said reduced bandwidth non-image feature stream transmitted from each of said plurality of image acquisition devices, ii) analyzing each said reduced bandwidth non-image feature stream at said remote image processing server, and iii) detecting events in each said image stream based upon said analyzing of each said reduced bandwidth non-image feature stream by said remote image processing server.

Regarding claim 32, Applicants submit that Bolle does not disclose at least extracting non-image features from each of a plurality of image acquisition devices, prior to detecting said event (Bolle, rather, compresses image data for later decompression and display); generating a reduced bandwidth non-image feature stream for each said image stream in the vicinity of the image acquisition devices, prior to detecting said event and transmitting said reduced bandwidth non-image feature stream for each of said plurality of image acquisition devices to a remote image processing server (Bolle, rather, transmits compressed image

data); or detecting events by performing high level image processing at said remote image processing server, said high level image processing comprising: i) receiving said reduced bandwidth non-image feature stream transmitted from each of said plurality of image acquisition devices, ii) analyzing each said reduced bandwidth non-image feature stream at said remote image processing server, and iii) detecting events in each said image stream based upon said analyzing of each said reduced bandwidth non-image feature stream by said remote image processing server (Bolle, rather, transmits edge data for display during camera orientation and, thereafter, transmits a high-resolution snapshot, such as a full photo-realistic image.

Claim 46 of the Subject Application recites a low level feature extraction component located in field and including an encoder extracting non-image feature data from said image stream and generating a reduced bandwidth non-image feature stream therefrom, said non-image feature data including parameters related to attributes of areas in said image stream; wherein said encoder transmits said reduced bandwidth non-image feature stream to a remote image processing server prior to detection of an event; wherein said remote image processing server analyzes said reduced bandwidth non-image feature stream and thereby detects said event associated with said image stream from each of said plurality of image acquisition devices; and wherein, responsive to detecting said event, said remote image processing server causes at least a portion of said image stream associated with said event to be transmitted to said remote image processing server.

Accordingly, Applicants submit that Bolle does not disclose at least a low level feature extraction component located in field and including an encoder extracting non-image feature data from said image stream and generating a reduced bandwidth non-image feature stream therefrom, said non-image feature data including parameters related to attributes of areas in said image stream (Bolle, rather, compresses image data for later decompression and display); said

encoder transmitting said reduced bandwidth non-image feature stream to a remote image processing server prior to detection of said event (Bolle, rather, transmits compressed image data); the remote image processing server analyzing said reduced bandwidth non-image feature stream and thereby detecting said events associated with said image stream from each of said plurality of image acquisition devices (Bolle, rather, transmits edge data for display during camera orientation and, thereafter, transmits a high-resolution snapshot, such as a full photo-realistic image); or, responsive to detecting said event, said remote image processing server causing at least a portion of said image stream associated with said event to be transmitted to said remote image processing server (Bolle, rather, transmits a high-resolution snapshot, such as a full photo-realistic image).

Lipton discloses a video surveillance system. Lipton includes steps labeled “archive video primitives” at reference number 43 and “extract event occurrences” at reference number 44 of FIG. 4. The description of FIG. 4, however, makes no mention of either of those functions or reference numbers. See paragraphs 105 and 106.¹ Further in paragraph 44, Lipton states “[t]he video content can be reanalyzed in a relatively short time because only the video primitives are reviewed and because the video source is not reprocessed” and refers to “the small-sized video primitives.”

The Examiner holds up Lipton as disclosing only detecting said event from analyzing said non-image feature stream by said image processing server. Applicants have previously posited their position regarding that premise and further submit that Lipton does not disclose the numerous claim elements missing from Bolle.

¹ Video primitives for the source video are said to be archived in block 43 of FIG. 4 after a video source has been processed in paragraph 148, which discusses FIG 9, and no description appears to be provided for block 44.

At least because one skilled in the art would not be likely to combine Bolle and Lipton to solve the problem resolved in the Subject Application and because Bolle and Lipton do not disclose all of the elements of the claims of the Subject Application, Applicants submit that the claims of the Subject Application should be patentable over Bolle and Lipton. The dependent claims are further believed to be patentable at least because they include all of the elements of the independent claims, which are believed to be patentable.

Conclusion

Applicants respectfully submit that claims 1, 2, 4-6, 8-11, 13-24, 26, 27, 30-47, 49-55, and 57-61 are in condition for allowance. Accordingly, reconsideration of the present rejections and passage to allowance of claims 1, 2, 4-6, 8-11, 13-24, 26, 27, 30-47, 49-55, and 57-61 at an early date are earnestly solicited.

If the Examiner is of the opinion that the instant application is in condition for disposition other than allowance, the Examiner is respectfully requested to contact Applicant's Attorney at the telephone number listed below so that any concerns may be expeditiously addressed.

Respectfully Submitted

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